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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A  
FILING DATE.

APPLICATION NUMBER: 60/511,012

FILING DATE: *October 14, 2003*

RELATED PCT APPLICATION NUMBER: PCT/US04/34233

Certified by



Jon W Dudas

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PTO/SB/16 (5-03)

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This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Mani	Ayyakkannu	Troy, Michigan
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto		
TITLE OF THE INVENTION (280 characters max)		
EXTRUDED ALUMINUM PALLET		
Direct all correspondence to: <b>CORRESPONDENCE ADDRESS</b>		
<input type="checkbox"/> Customer Number <input style="width: 150px; border: 1px solid black; height: 1.2em; vertical-align: middle;" type="text"/> →		Place Customer Number Bar Code Label here
OR <input style="width: 150px; border: 1px solid black; height: 1.2em; vertical-align: middle;" type="text"/>		
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<input checked="" type="checkbox"/> Firm or Individual Name	John R. Benefiel	
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ENCLOSED APPLICATION PARTS (check all that apply)		
<input checked="" type="checkbox"/> Specification Number of Pages	<input style="width: 20px; border: 1px solid black; height: 1.2em; vertical-align: middle;" type="text" value="1"/>	<input type="checkbox"/> CD(s), Number <input style="width: 100px; border: 1px solid black; height: 1.2em; vertical-align: middle;" type="text"/>
<input checked="" type="checkbox"/> Drawing(s) Number of Sheets	<input style="width: 20px; border: 1px solid black; height: 1.2em; vertical-align: middle;" type="text" value="5"/>	<input checked="" type="checkbox"/> Other (specify) <input style="width: 100px; border: 1px solid black; height: 1.2em; vertical-align: middle;" type="text"/>
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76 <input style="width: 150px; border: 1px solid black; height: 1.2em; vertical-align: middle;" type="text"/>		
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)		
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.	FILING FEE AMOUNT (\$)	
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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.		
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Respectfully submitted,

SIGNATURE



Date

10/14/03

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REGISTRATION NO.

24,889

(if appropriate)

Docket Number:

IND-104

**USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of : Mani Ayyakannu  
U.S. Serial No. : -  
Filed On : October 14, 2003  
For : EXTRUDED ALUMINUM PALLET

CERTIFICATE OF EXPRESS MAILING

Commissioner for Patents  
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Sir:

I hereby certify that the accompanying provisional patent application, along with any items referred to as being attached or enclosed, is being deposited with the United States Postal Service, Express Mail Customer Receipt No. EL720605699US on October 14, 2003.

Date: October 14, 2003

By:

  
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1  
2  
3

## EXTRUDED ALUMINUM PALLET

4           The pallet is a structure used to transport a load of up to 2800 lb. The most  
5       commonly used pallets today are made of wood. Many wood pieces are nailed together to form  
6       the pallet. Wood pallets have many disadvantages including such factors as environmentally not  
7       friendly, water absorbent, damages easily by splintering, and also they are typically very heavy,  
8       etc. In the recent years, much focus has been given to plastic/composite pallets. However, most  
9       such pallets are not fire retardant and also not easily recyclable. Some pallets add fire retardants  
10      such as bromine which are not compatible with food cargo and also they are very expensive.

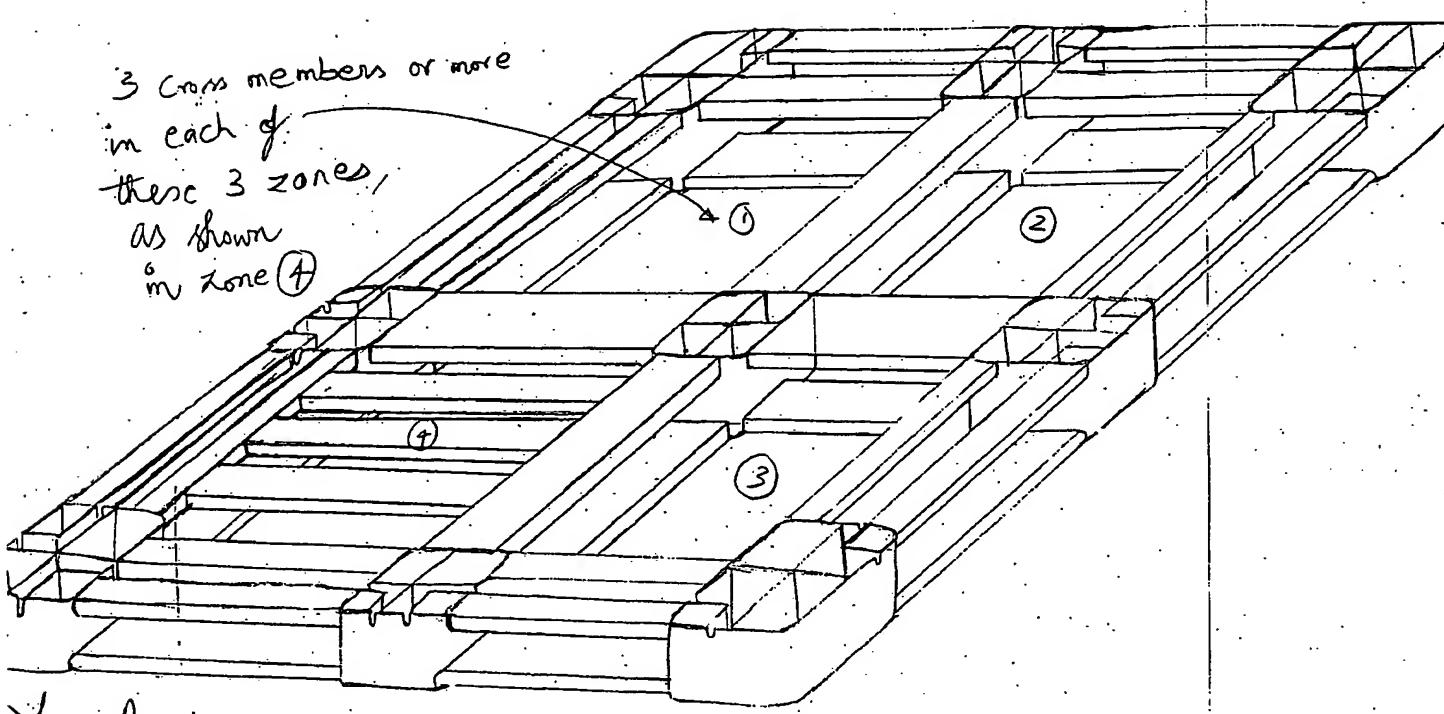
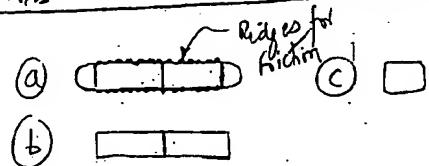
11           As a solution to the above, an extruded metal pallet has been designed. All the  
12       members and blocks (9 blocks in total) are profile extruded in various thicknesses and welded  
13       together by using a process such as pulsed MIG welding. The tubular members have ridges on  
14       the outside to provide anti-slip surfaces and ribs on the inside to reinforce the section as shown in  
15       Figure 1. The blocks are shown in Figures 2-4, and are welded perpendicular to the tubular  
16       members to allow maximum load carrying capacity.

17           The corner and midside blocks are provided with grooves to allow the edges  
18       members to deflect and the “torque towers” to twist elastically during an “edge” impact and  
19       rebound, with minimal or no permanent set (Figure 5). The corners in the corner block can crush  
20       in a controlled manner during a corner impact. Also, the corners are rounded in the blocks to  
21       allow the fork truck tines to slip past without deforming or damaging the blocks.

22

Extruded & Welded  
Pallet

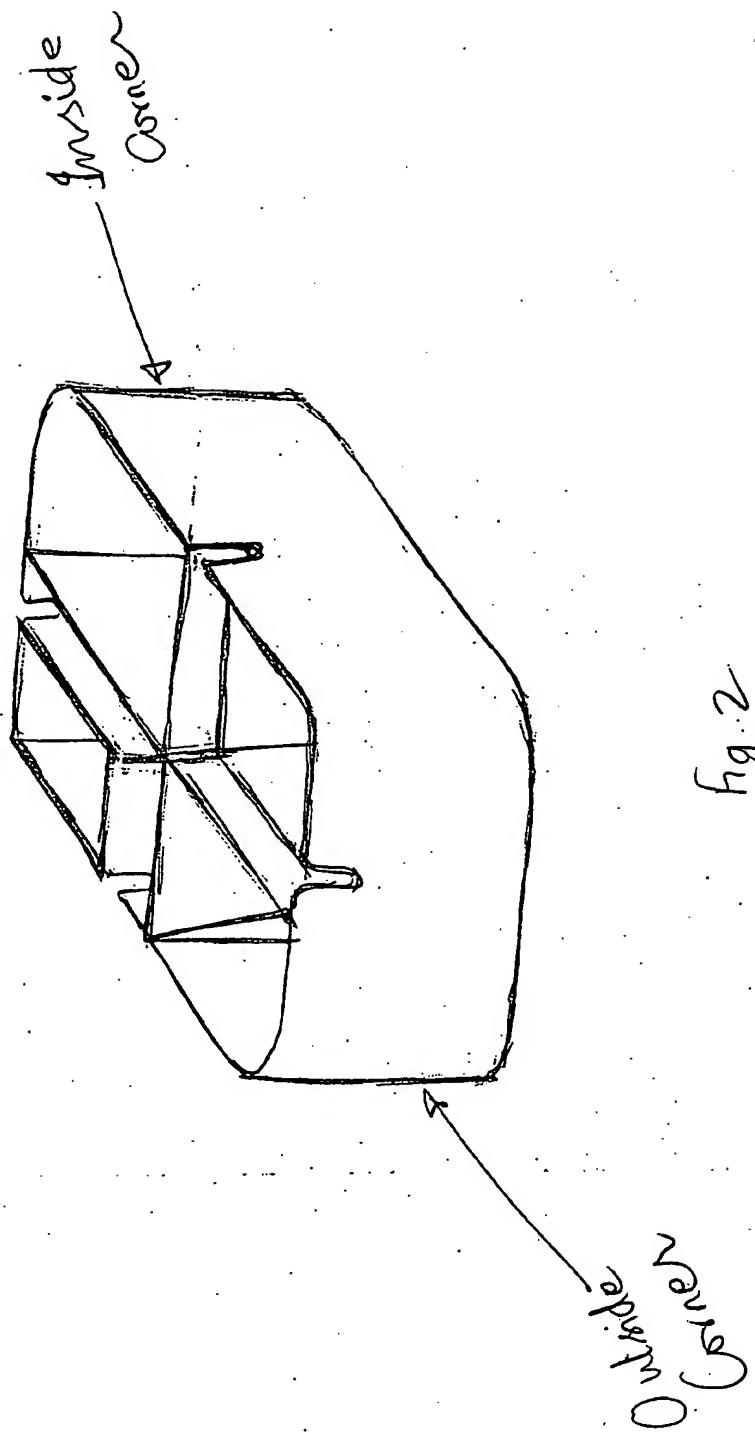
Cross-Member Cross Section



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Fig. 1

Corner Block



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fig. 2

3.

Mid Side Block

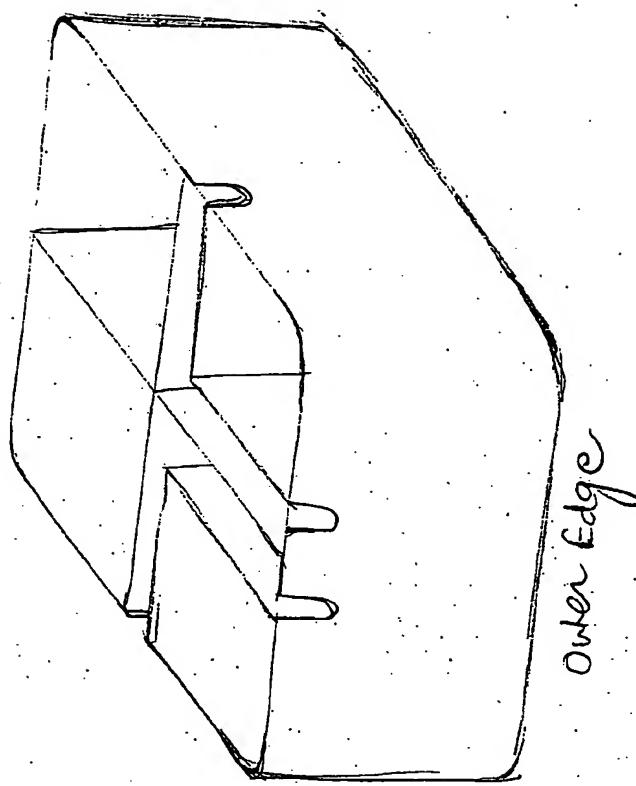


Fig. 3

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Oct 16, 2003

Center Block

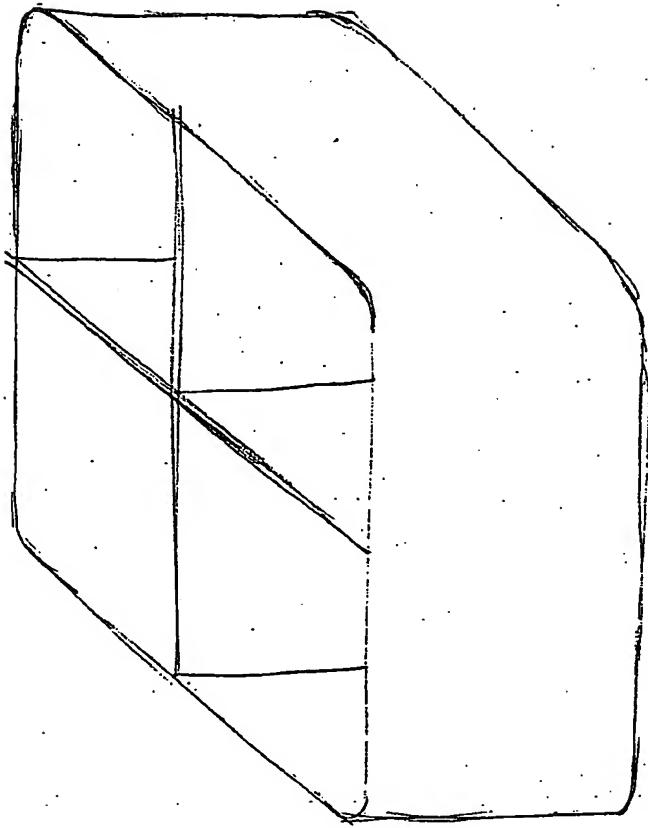


Fig. 4

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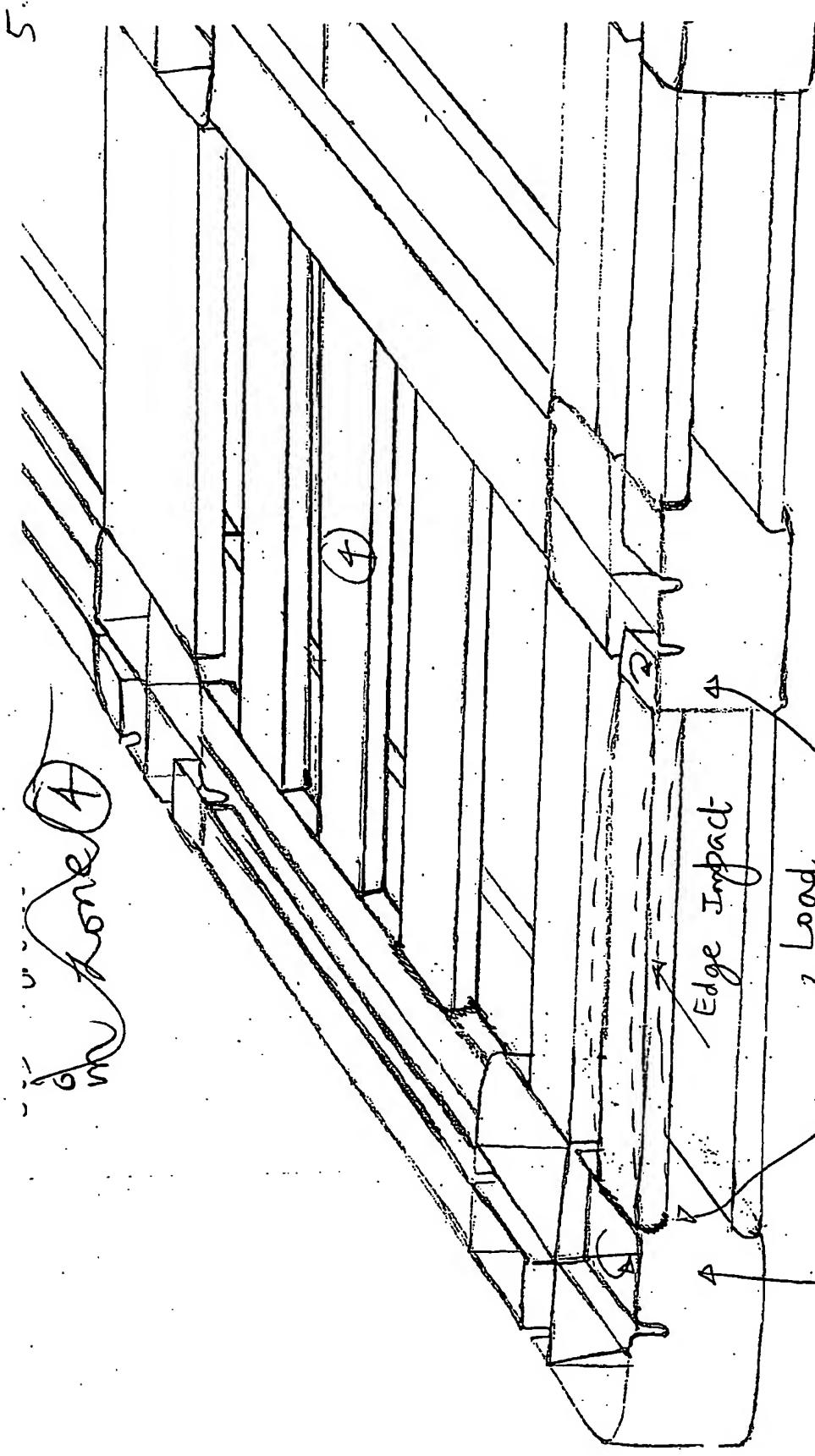


fig. 5

Torsion Towers  
(Twist about vertical  
axis of towers)

Mani Jayakanan  
Oct 10, 2003

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